Central Pacific Transcontinental Railroad, Tunnel 25
Southern Pacific Donner Pass Route Tunnels
Milepost 133.09
Applegate vicinity
Placer County
California

HAER No. CA-201

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Western Region
Department of the Interior
San Francisco, CA 94107

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HISTORIC AMERICAN ENGINEERING RECORD

CENTRAL PACIFIC TRANSCONTINENTAL RAILROAD, TUNNEL 25
HAER No. CA-201

Location: Southern Pacific Donner Pass Route Tunnels
Milepost 133.09, Applegate vicinity, Placer County, California

UTM: 10-673550-4317000
Quad: Greenwood, Calif. 7.5', 1949 (photorevised 1973)
(west portal)

UTM: 10-673710-4317190
Quad:, Greenwood, Calif. 7.5' 1949 (photorevised 1973)
(east portal)

Date of Construction: 1910.

Engineer: Southern Pacific Railroad Engineering Department.

Present Owner: Union Pacific Railroad, 1416 Dodge Street, Omaha NE 68101.

Present Use: Railroad Tunnel.

Significance: The Central Pacific First Transcontinental Railroad is a segment of the western half of the first transcontinental railroad, built from Sacramento, California to Promontory Summit, Utah between 1863 and 1869, where it joined the Union Pacific Railroad which had built west from Omaha. For the purpose of the current project, the first transcontinental railroad was found likely to be eligible for the National Register of Historic Places at the national level of significance under Criterion A for its significance in transportation history, in uniting the East and the West, and in the development of the West. The railroad's period of significance is 1869 to 1945, from the line's completion in 1869, through the years of its role in the settlement and development of the West, to the conclusion of the railroad's achievements in World War II. Tunnel 25 is a contributive element of this property.

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I. DESCRIPTION

Tunnel 25 is a 763-foot, single track railroad tunnel, with granite ashlar portal faces and wingwalls. As-built, the tunnel was concrete-lined for the first fifty feet in from each portal, with the remainder lined in redwood timber; the railroad has subsequently covered the timbering with shotcrete. The tunnel is on a tangent (no curve) alignment, and carries the tracks of the Union Pacific Railroad's (formerly Southern Pacific) Donner Pass line.

II. HISTORICAL INFORMATION

Contractors, Utah Construction Company of Ogden built Tunnel 25 (originally numbered Tunnel 11) in 1910 as an element of the reconstruction and double-tracking of the original Central Pacific line between Rocklin and Colfax. [For a full history of this line and of this undertaking, see the documentation set for the Central Pacific Transcontinental Railroad (Southern Pacific Overland Route) (Southern Pacific Donner Pass Route), Southern Pacific Donner Pass Route Tunnels, HAER No. CA-196.] After assuming control of the Southern Pacific/Central Pacific and merging them with the Union Pacific in 1901, Edward H. Harriman had embarked on a series of huge reconstruction projects system-wide. One of these was the double-tracking of the original Central Pacific line over Donner Pass, the first segment of which was from Rocklin to Colfax. In connection with this, Harriman also moved the roundhouse and locomotive shop facilities originally built at Rocklin by the Central Pacific, to nearby Roseville where he built a much larger and more modern facility to handle the larger locomotives he was bringing onto the system.

Two contracting firms divided the work, with Utah Construction Company building the portion from Colfax west to Clipper Gap, and Erickson & Petterson handling the work from Rocklin east to Clipper Gap. All the tunnels, whether single- or double-track, conformed to Southern Pacific Common Standard plans.

Utah Construction Company built their tunnels by driving two drifts (small pilot tunnels) at the spring line of the final arch. They then drove a third drift at grade level and centered, roofing it with loose timbers. Workers then blasted the "bench", the material between the floor of the upper drifts and the ceiling of the lower drift, then removed some of the lower drift's roof timbers to drop the loose material down into dump cars for removal. At Tunnel 25, proximity of the original line caused problems for the construction crews. At the west end of the tunnel, the new line was to be in a cut; this, however, was so close to the old line that a shoo-fly (detour) track was built to carry the old line farther to the south to allow working room; this was the only location on the project that required use of a shoo-fly. Still, the working area remained so constrained that steam shovels could not be used without risk of blocking the old line, and rocks were blown onto the shoo-fly track when a powder charge was detonated. Crews therefore excavated the cut by hand, using the "trap" method. By excavating a pilot drift, loosely timbering its roof, and laying tracks for dump cars along its floor, crews could then keep a continuous line of cars shuttling in and out as they used gravity as an aid to dropping the earth overhead into the cars for removal. When they eventually reached the working face of the tunnel, they excavated it in the manner described above, working from west to east.

III. SOURCES

"Colfax Grade Revision; Southern Pacific," *Railway Age Gazette*, 48:7, February 18, 1910.

Daggett, Stuart. *Chapters on the History of the Southern Pacific*. New York: Augustus M. Kelley, Publishers, 1966; originally published 1922.

Deverell, William. *Railroad Crossing: California and the Railroad*, 1850-1910. Berkeley: University of California Press, 1994.

"E.H. Harriman Is President," *The Sacramento Bee*, September 30, 1901.

"Electrification on the Southern Pacific," *The Railroad Gazette*, 43:10, September 6, 1907.

"General News Section," *Railway Age Gazette*, 50:16, April 21, 1911; 50:26, June 30, 1911; 60:11, March 17, 1916.

Hofsommer, Don L. *The Southern Pacific, 1901-1985*. College Station, TX: Texas A&M University Press, 1986.

Howard, Robert West. *The Great Iron Trail: The Story of the First Transcontinental Railroad.* New York: G. P. Putnam's Sons, 1962.

Kraus, George. *High Road to Promontory: Building the Central Pacific across the High Sierra.* Palo Alto: American West Publishing Company, 1969.

"Millions To Be Expended: Southern Pacific Is to Be Put in Fine Shape," *The Sacramento Bee*, June 25, 1901.

"Oil Burning Mallets; Southern Pacific," *Railway Age Gazette*, 50:24a, June 16, 1911.

"Railroad Construction," *The Railroad Gazette*, 43:19, November 8, 1907; 43:26, December 27, 1907; 50:18, May 5, 1911; 50:24, June 16, 1911; 63:15.

Sabin, Edwin L. *Building the Pacific Railway*. Philadelphia and London: J. B. Lippincott Company, 1919.

Signor, John R. to Richard Starzak, Memorandum, "Brief Chronological History of Sierra Tunnels," October 4, 1996.

"Survey For The Big Tunnel," *The Sacramento Bee*, August 24, 1901.

"The Days When The Central Pacific Was Young," *Southern Pacific Bulletin*, 9:5, May 1920.

"The Harriman Influence," *The Railroad Gazette*, 42:2, January 11, 1907.

"The Harriman Investigation," *The Railroad Gazette*, 42:9, March 1, 1907.

"The Interstate Commerce Commission's Report on the Harriman Investigation," *The Railroad Gazette*, 43:3, July 19, 1907.

"The Roseville Yards of the Southern Pacific," *The Railroad Gazette*, 43:26, December 27, 1907.

United States Geological Survey. Topographic map. Greenwood, Calif. quadrangle, 7.5' series, 1949 (photorevised 1973).

IV. PROJECT INFORMATION

As a result of the 1996 merger of the Union Pacific and Southern Pacific Railroads, a federal undertaking under the jurisdiction of the Surface Transportation Board of the U.S. Department of Transportation, and in order to accommodate freight trains utilizing longer and taller cars and loads--tri-level auto rack cars and cars carrying double-stacked containers, the Union Pacific will need to increase tunnel clearances on the former Southern Pacific Donner Pass Route. The tunnels, built between 1868 and 1925, are contributing elements of the National Register-eligible Southern Pacific Donner Pass Route Tunnels Historic District. All tunnels have been laser-measured and the railroad will determine clearance needs on a tunnel-by-tunnel basis. Some, because of curved alignment, will require interior work to allow for longer cars such as tri-level auto rack cars; others, including Tunnel 25, will require both interior and portal work to provide sufficient vertical clearance for "double-stack" container cars. The latter work may impact the character-defining tunnel portals if crown mining of the tunnels (as opposed to lowering the tunnel floors) is selected. Inasmuch as this would cause an adverse effect to the tunnels, Union Pacific has elected to record the tunnels for the Historic American Engineering Record. Documentation was carried out by P.S. Preservation Services, John Snyder Field Director and Historian, and Ed Andersen, Photographer. Photos were made in August 1997, and research was carried out from August 1997 through March 1998.